

CLAIMS

① (P)

1. A computer monitoring system for monitoring information displayed on a video display terminal connected to, and receiving display information from, a data processing device comprising:

video raster signal input means for receiving a video raster signal representative of said information displayed on the video display terminal from the data processing device; and

conversion means connected to said video raster signal input means for converting said video raster signal into a digital signal representative of said information contained in said video raster signals,
said conversion means comprising character determination means for determining an identity of each character displayed on the video display terminal and for generating a digital code indicative of said identity of said each character displayed on the video display terminal,

said character determination means comprising circuitry for generating a series of cyclic redundancy checks, wherein each said cyclic redundancy check is generated from pixel information associated with each character location on the video display terminal.

2. The system of claim 1 further comprising transmission means connected with said conversion means for transmitting said digital code to a remote location.

3. The system of claim 2 further comprising:

reception means at said remote location connected with said transmission means for receiving said digital code transmitted by said transmission means; and
remote video display means connected with said reception means for displaying said digital code received from said reception means, said remote video display means showing an image substantially the same as that shown on the video display terminal to allow a user to determine the operational status of the data processing device.

4. The system of claim 3 wherein said digital code is transmitted to said remote location in response to a command received from said remote location requesting that said digital code be transmitted.

5. The system of claim 4 further comprising interconnection means for interconnecting a plurality of said computer monitoring systems with one another and for allowing a user at said remote location to selectively access any one of said computer monitoring systems.

6. The system of claim 1 further comprising:

 memory means connected with said conversion means for storing said digital code to retain an image of said information displayed on the video display terminal; and

 control means connected to said memory means and said conversion means for monitoring changes to said image and for storing said digital code representative of said changes in said memory means, such that said memory means contains a series of image frames that can be used by an operator to determine the cause of a system failure.

7. The system of claim 1 further comprising:

 training means connected to said character determination means for generating a predetermined character display, for operating said character determination means to generate digital codes representative of an identity of each character in said predetermined character display, and for storing said digital codes generated by said character determination means; and

 comparison means connected with said training means and said character determination means for comparing digital codes generated by said character determination means for an unknown display on said video display terminal with said digital codes representative of each character on said predetermined display, such that said identity of each character displayed on said unknown display can be determined.

8. The system of claim 1 further comprising:

synchronization signal input means for receiving from the data processing device a horizontal synchronization signal; and

pixel clock generating means connected with said synchronization signal input means and said conversion means for generating a pixel clock signal.

9. The system of claim 1 wherein said data processing device is a personal computer, and said video raster signal input means comprises a circuit interconnected between said personal computer and the video display terminal.

10. The system of claim 2 wherein said transmission means comprises a standard public switched telephone line.

11. A method of receiving, analyzing and converting information contained in an analog video raster signal generated by a data processing device and displayed on a video display terminal associated with the data processing device, into a digital representation of that information comprising the steps of:

receiving the analog video raster signal generated by the data processing device;

converting said analog video raster signal into a digital signal representative of said information contained in said video raster signal, said converting step including the steps of:

determining an identity of each character displayed on the video display terminal; and

generating a digital code indicative of said identity of said each character displayed on the video display terminal,

wherein said step of generating a digital code comprises the step of generating a series of cyclic redundancy checks from pixel information associated with each character location on the video display terminal.

12. The method of claim 11 further comprising the step of transmitting said digital codes to a remote location.

13. The method of claim 12 further comprising the steps of:
receiving said digital codes transmitted to said remote location; and
displaying said digital codes to create an image substantially the same as
that shown on the video display terminal to allow a user to determine an operational
status of the data processing device.

14. The method of claim 13 wherein said step of transmitting said digital
codes to said remote location is performed in response to a command received from
said remote location requesting that said digital codes be transmitted.

15. The method of claim 12 wherein said digital codes are transmitted to said
remote location using a standard public switched telephone line.

16. The method of claim 11 further comprising the steps of:
analyzing a predetermined character sequence displayed on the video
display terminal to determine an identity of each character displayed on said video
display terminal;
generating a digital code representative of each character in said
predetermined character sequence displayed on said video display terminal;
and
storing said digital codes in a memory.

17. The method of claim 11 further comprising the steps of:
receiving a horizontal synchronization signal from the data processing device; and
generating a pixel dock signal in synchronization with said horizontal
synchronization signal.

18. The method of claim 11 wherein said data processing device is a personal
computer, and said video raster signal is intercepted between said personal computer
and the video display terminal.

19. A computer implemented method of converting information contained in a
video raster signal generated by a data processing device and displayed on a video

display terminal associated with the data processing device, into a digital representation of that information comprising the computer implemented steps of:

receiving the video raster signal generated by the data processing device; and

converting said video raster signal into a digital signal representative of said information contained in said video raster signal,

said converting step including the steps of:

determining an identity of each character displayed on the video display terminal; and

generating a digital code indicative of said identity of said each character displayed on the video display terminal,

wherein said step of generating a digital code comprises the step of generating a series of cyclic redundancy checks from pixel information associated with each character location on the video display terminal.

20. A computer monitoring system for monitoring information contained in an analog video raster signal generated by a data processing device and displayed on a video display terminal connected to the data processing device and for convening the information contained in the analog video raster signal into a digital representation of that information for transmission to a remote location comprising:

analog video raster signal input means connected with the data processing device for receiving said analog video raster signal generated by said data processing device;

conversion means connected to said analog video raster signal input means for receiving said analog video raster signal and for converting said analog video raster signal into a digital signal comprising a plurality of digital codes representative of information contained in said analog video raster signal, said conversion means comprising processing means for analyzing said analog video raster signal, for determining an identity of each character displayed on the video display terminal, and for generating at least one of said plurality of digital codes, said at least one of said plurality of digital codes being indicative of said identity of said each character displayed on the video display terminal.

21. A computer monitoring system for monitoring information contained in an analog video raster signal generated by a data processing device and displayed on a video display terminal connected to the data processing device and for converting the information contained in the analog video raster signal into a digital representation of that information for transmission to a remote location comprising:

analog video raster signal input means connected with the data processing device for receiving said analog video raster signal generated by said data processing device;

conversion means connected to said analog video raster signal input means for receiving said analog video raster signal and for converting said analog video raster signal into a digital signal comprising a plurality of digital codes representative of information contained in said analog video raster signal, said conversion means comprising processing means for analyzing said analog video raster signal, character determination means for determining an identity of each character displayed on the video display terminal and for generating a digital code indicative of said identity of said each character displayed on the video display terminal and for generating at least one of said plurality of digital codes, said at least one of said plurality of digital codes being indicative of said identity of said each character displayed on the video display terminal; and

training means connected to said character determination means for generating a predetermined character display, for operating said character determination means to generate digital codes representative of an identity of each character in said predetermined character display, and for storing said digital codes generated by said character determination means.

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